CLAIMS

1. A method for controlling the forwarding quality in a data network comprising measuring (S11) end-to-end forwarding quality in measurement nodes (106) located outside the network core and detecting forwarding quality violations in at least one path between these nodes, **characterised by** the further steps of:
- selecting (S13, S15, S17) at least one potentially overloaded interface comprised in the at least one path where quality violations were detected by combining knowledge about different end-to-end measurements performed in the network, with knowledge about the network topology, i.e. which interfaces are traversed over each individual path, and knowledge about booking levels and forwarding capacity for the interfaces;
- defining (S23) a new or adjusting (S21) an already existing provisioning level for each selected interface, said provisioning level defining a maximum admitted sum of forwarding resources requested directly or indirectly by applications for their application data flows, ADFs, for the interface/s, such that the usage of each path detected to have forwarding quality violations is limited at one or more interfaces.

2. A method according to clam 1, **characterised by** iterating (S29) the process to improve the settings of the provisioning levels in the system.

3. A method according to claim 1 or 2, **characterised by** storing (S27) information about previous end-to-end measurements and previous booking levels for the interfaces.

4. A method according to any one of the preceding claims, **characterised by** using history of previous booking levels possibly together with any associated quality violations, forwarding capacities and/or provisioning levels for the interfaces for the selection of at least one potentially overloaded interface.

5. A method according to claim 4, **characterised by** detecting (S33) that a previously set provisioning level for an interface is reached without any measured quality violation on paths involving this interface and by using (S35) the stored information of previous end-to-end measurements and previous booking levels selecting (S37) at least one other interface that probably caused the quality violation measured when the previously set provisioning level was set and remove (S39) or increase the provisioning level for the previously selected interface and instead provide a provisioning level to each new selected interface or if no other potentially overloaded interfaces exist, increase (S39) the limiting provisioning level.

6. A method according to any one of the preceding claims, **characterised in that** the defining (S23) of a new or the adjusting (S21) of an already existing provisioning level for the at least one selected interface is performed by setting the provisioning level equal to the booking-level for the interface at the time for the detected quality violation.

7. A method according to any one of the claims 1-5, **characterised in that** the defining (S23) of a new or the adjusting (S21) of an already existing provisioning level for the at least one selected interface is performed by setting the provisioning level lower than the booking-level in the interface at the time for the detected quality violation and either pre-empting some reservations to reach the provisioning level or waiting for some reservations to be released to reach the provisioning level.

8. A method according to claim 6 and 7, **characterised by** choosing one of the described provisioning level setting methods depending on which level of quality violation that was measured.

9. A node in a data network, said node being adapted to control the forwarding quality in the network and comprises receiving means (57) adapted to receive information of end-to-end measurements of forwarding quality performed in the network, **characterised in that** the receiving means (57) further is adapted to receive

information of the network topology and information of booking levels and forwarding capacity for interfaces in the network and **in that** it further comprises:
- selecting means (59) connected to the receiving means (57) and adapted to combine information from the end-to-end measurements with the topology information and the information of booking levels to select at least one potentially overloaded interface comprised in at least one path where quality violations has been detected by end-to-end measurements;
- provisioning level defining and adjusting means (61) connected to the selecting means (59) and adapted to define a new or adjust an already existing provisioning level for the at least one selected interface, said provisioning level defining a maximum admitted sum of forwarding resources requested directly or indirectly by applications for their application data flows, ADFs, for the interface/s, such that the usage of each path detected to have forwarding quality violations is limited at one or more interfaces.

10. A node according to clam 9, **characterised in that** it is adapted to iterate the process of defining and adjusting provisioning levels to improve the settings of the provisioning levels in the system.

11. A node according to any one of the claims 9-10, **characterised in that** it comprises storing means (63) connected to the receiving means (57) and to the selecting means (59), said storing means (63) being adapted to store information about previous end-to-end measurements and previous booking levels for the interfaces.

12. A node according to claim 11, **characterised in that** the selecting means (59) is adapted to retrieve information from the storing means (63) in order to use history of previous booking levels possibly together with any associated quality violations, forwarding capacities and/or provisioning levels for the interfaces for the selection of at least one potentially overloaded interface.

13. A node according to claim 11 or 12, **characterised in that** the receiving means (57) further is adapted to receive information that a previously set provisioning level in an interface is reached without any measured quality violation on paths involving this interface and **in that** the selecting means (59) is adapted to by using the stored information of previous end-to-end measurements and previous booking levels select at least one other interface that probably caused the quality violation measured when the previously set provisioning level was set and the defining and adjusting means (61) is adapted to remove or increase the provisioning level for the previously selected interface and instead provide a provisioning level to each new selected interface or if no other potentially overloaded interfaces exist, increase the limiting provisioning level.

14. A node according to any one of the claims 9-13, **characterised in that** the defining or adjusting means (61) is adapted to set the provisioning level equal to the booking-level for the interface at the time for the detected quality violation.

15. A node according to any one of the claims 9-13, **characterised in that** the defining or adjusting means (61) is adapted to set the provisioning level lower than the booking-level for the interface at the time for the detected quality violation and either pre-empting some reservations to reach the provisioning level or waiting for some reservations to be released to reach the provisioning level.

16. A node according to claim 14 and 15, **characterised in that** the defining or adjusting means (61) is adapted to choose one of the described provisioning level setting methods depending on which level of quality violation that was measured.

17. A computer program product directly loadable into the internal memory of a processing means within one or more nodes in a data network, comprising the software code means for performing the steps of any of the claims 1-8.

18. A computer program product stored on a computer usable medium, comprising readable program for causing a processing means in one or more nodes in a data network, to control an execution of the steps of any of the claims 1-8.